

WHAT IS CLAIMED IS:

Sub A8

1. A Method for updating multimedia feature information in a multimedia retrieval system using weight of multimedia features and reliability of the weight, comprising the steps of:

5 (a) evaluating a retrieval performance using multimedia feature information;

(b) detecting change of retrieval environment based on the retrieval performance evaluation; and

(c) updating the weight of the multimedia feature information and reliability of the weight by reflecting the retrieval performance evaluation and the retrieval environment change.

10 2. A Method for updating multimedia feature information in a multimedia retrieval system using weight of multimedia features and reliability of the weight, comprising the steps of:

15 (a) retrieving multimedia using previous weight;

(b) receiving one or more user feedbacks with respect to results of the multimedia retrieval;

(c) calculating retrieval performance with respect to the results of present retrieval using the one or more user feedbacks;

20 (d) updating the reliability of the present weight by reflecting the calculated retrieval performance; and

(e) updating the present weight using the updated reliability.

3. The method as claimed in claim 1 or 2, wherein the reliability update is proportionally influenced by the retrieval performance.

A 4. The method as claimed in claim 1 or 2, wherein the reliability update
is proportionally influenced by improvement of the retrieval performances.

SUB B2 5. The method as claimed in claim 4, wherein a reliability update rate is
proportionally influenced by number of feedbacks participated in calculation of
5 the retrieval performance.

6. The method as claimed in claim 4, wherein the reliability update is
proportionally influenced by the difference between the present and previous
retrieval performances.

SUB A9 7. The method as claimed in claim 6, wherein the reliability is calculated
10 by a following formula:

previous reliability $\times (1 + \text{reliability increment}) + \alpha$

wherein,

reliability increment: a function that multiplies the difference between
the present and previous retrieval performance with the number of
15 feedbacks.

α : constant for making the reliability value proportional to the number of
feedbacks in same condition.

SUB C4 8. The method as claimed in claim 4, wherein a reliability update is
proportionally influenced by a ratio of the present retrieval performance to the
20 previous retrieval performance.

SUB A10 9. The method as claimed in claim 8, wherein the reliability is calculated
by a following formula:

previous reliability $\times (1 + \text{reliability increment}) + \alpha$

wherein,

reliability increment: a function that multiplies the rate of the present retrieval performance to the previous retrieval performance with the number of feedbacks.

α : constant for making the reliability value proportional to the number of
5 feedbacks in same condition.

Sub B6 10. A multimedia data structure for a multimedia retrieval using weight of the multimedia feature and reliability of the multimedia feature, comprising:
10 a reliability of present weight updated by reflecting retrieval performance calculated using one or more user's feedbacks with respect to a multimedia retrieval result obtained using previous weight;
15 a present weight updated using the updated reliability.

Sub A11 11. A method for updating weight of multimedia features using reliability of the weight in a multimedia retrieval system using weight among multimedia features and weight among elements of the multimedia feature, wherein the weight is updated based on the following way that:
15 (a) the more times the previous feature weights are learned with the feedbacks from the user, the less the feature weights are influenced by new feedback;
20 (b) the more recent the feedback is, the more the feedback influence to the feature weights update; and
25 (c) learning rate of the weights among the multimedia features is higher than that of the weights among elements of a multimedia feature.

Sub B8 12. The method as claimed in claim 11, wherein the weight is updated according to the following formula:

$$[\text{Reliability}^a \times \text{Old_W} + \text{Cur_W}] / [\text{Reliability}^a + 1]$$

wherein, $0 < a < 1$, and exponential term "a" in the formula for weights of features is less than exponential term "a" in the formula for weights of elements of a feature.

~~Sub A12~~ 13. A multimedia data structure for retrieval multimedia objects using weight among multimedia features and weight among elements of the multimedia feature, wherein the weight is updated based on the following way that:

10 (a) the more times the previous feature weights are learned with the feedbacks from the user, the less the feature weights are influenced by new feedback;

(b) the more recent the feedback is, the more the feedback influence to the feature weights update; and

15 (c) learning rate of the weights among the multimedia features is higher than that of the weights among elements of a multimedia feature, in relation to the reliability formula, $[\text{Reliability}^a \times \text{Old_W} + \text{Cur_W}] / [\text{Reliability}^a + 1]$ wherein, $0 < a < 1$, and exponential term "a" in the formula for weights of features is less than exponential term "a" in the formula for weights of elements of a feature.

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